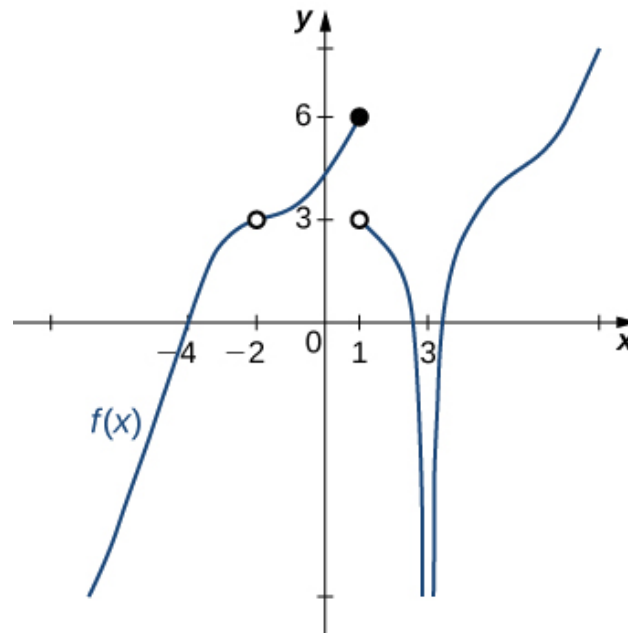


1. For the graph below, find the value(s) a that makes the statement true:
 $\lim_{x \rightarrow a} f(x) = 3$.



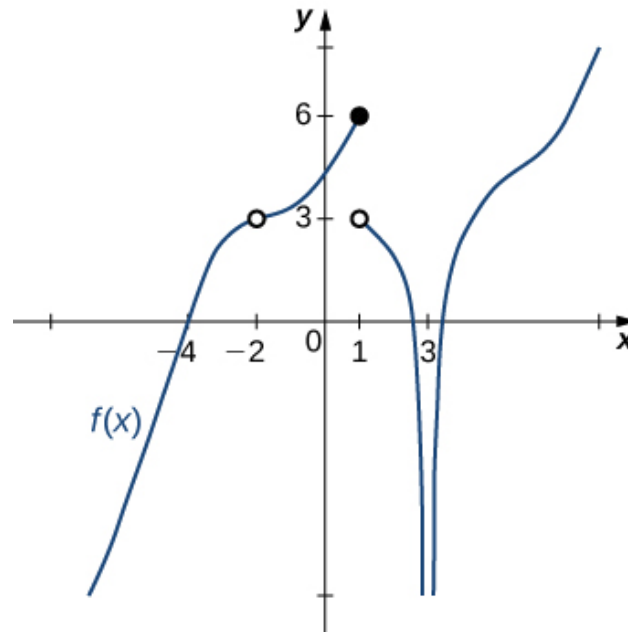
- A. 1
- B. $-\infty$
- C. -2
- D. Multiple a make the statement true.
- E. No a make the statement true.

2. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \rightarrow -5^-} \frac{-8}{(x+5)^8} + 5$$

- A. $f(-5)$
- B. ∞
- C. $-\infty$
- D. The limit does not exist
- E. None of the above

3. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \rightarrow a} f(x)$ does not exist.



- A. 1
- B. 3
- C. -2
- D. Multiple a make the statement true.
- E. No a make the statement true.

4. Evaluate the limit below, if possible.

$$\lim_{x \rightarrow 9} \frac{\sqrt{3x - 11} - 4}{8x - 72}$$

- A. 0.016
- B. 0.217
- C. ∞
- D. 0.125

E. None of the above

5. Evaluate the limit below, if possible.

$$\lim_{x \rightarrow 9} \frac{\sqrt{4x - 11} - 5}{6x - 54}$$

A. 0.067

B. 0.100

C. 0.333

D. ∞

E. None of the above

6. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \rightarrow -5^-} \frac{-8}{(x + 5)^6} + 6$$

A. $f(-5)$

B. ∞

C. $-\infty$

D. The limit does not exist

E. None of the above

7. To estimate the one-sided limit of the function below as x approaches 8 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{8}{x} - 1}{x - 8}$$

A. $\{7.9000, 7.9900, 8.0100, 8.1000\}$

B. $\{7.9000, 7.9900, 7.9990, 7.9999\}$

- C. $\{8.1000, 8.0100, 8.0010, 8.0001\}$
- D. $\{8.0000, 7.9000, 7.9900, 7.9990\}$
- E. $\{8.0000, 8.1000, 8.0100, 8.0010\}$

8. To estimate the one-sided limit of the function below as x approaches 2 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{2}{x} - 1}{x - 2}$$

- A. $\{2.1000, 2.0100, 2.0010, 2.0001\}$
- B. $\{1.9000, 1.9900, 2.0100, 2.1000\}$
- C. $\{2.0000, 1.9000, 1.9900, 1.9990\}$
- D. $\{1.9000, 1.9900, 1.9990, 1.9999\}$
- E. $\{2.0000, 2.1000, 2.0100, 2.0010\}$

9. Based on the information below, which of the following statements is always true?

$f(x)$ approaches ∞ as x approaches 4.

- A. x is undefined when $f(x)$ is close to or exactly ∞ .
- B. $f(x)$ is close to or exactly 4 when x is large enough.
- C. $f(x)$ is undefined when x is close to or exactly 4.
- D. $f(x)$ is close to or exactly ∞ when x is large enough.
- E. None of the above are always true.

10. Based on the information below, which of the following statements is always true?

$f(x)$ approaches 17.314 as x approaches 6.

- A. $f(6) = 17$

- B. $f(17)$ is close to or exactly 6
 - C. $f(6)$ is close to or exactly 17
 - D. $f(17) = 6$
 - E. None of the above are always true.
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